Claims

Claimed is:

1. A process for the production of a disintegrator roll of an open-end spinning apparatus with a shredding-element designed as a sawtooth wire, which is inlaid in a groove of a shredding-element carrier, therein characterized, in that the sawtooth wire is converted into a shape, which essentially corresponds to that shape, which the sawtooth wire is to assume on the shredding-element carrier, and the preshaped sawtooth wire is to be subsequently hardened.

2. A process in accord with Claim 1, therein characterized, in that the sawtooth wire is preshaped on a preshaping body, the circumference of which is essentially that of the shredding-element carrier of the disintegrator roll.

3. A process in accord with Claim 2, therein characterized, in that the sawtooth wire, during the hardening procedure, remains on the preshaping body.

4. A process in accord with Claim 1, therein characterized, in that the sawtooth wire is shaped by being wound on the shredding-element carrier of the disintegrator roll, and is hardened while it remains on the said shredding-element carrier.

5. A process in accord with one or more of the Claims 1 to 4, therein characterized, in that the ends of the sawtooth wire which are to be found on the shredding-element carrier are subjected to a grinding procedure.

6. A process in accord with one of more of the Claims 1 to 5, therein characterized, in that the shredding-element is hardened by induction.

7. A process in accord with Claim 6, therein characterized, in that the shredding-element is hardened by means of a high frequency current.

8. A process in accord with Claim 7, therein characterized, in that the surface of the shredding element in the area of its teeth is hardened by induction with an alternating current with a frequency of more than 100 kHz, especially with a frequency in a range between 1500 and 2000 kHz.

9. A process in accord with one or more of the Claims 1 to 8, therein characterized, in that the shredding-element is hardened in a protective gas.

10. A process in accord with one or more of the Claims 1 to 9, therein characterized, in that the shredding-element is stress-relieved after the hardening by means of a heat treatment.

11. A process in accord with one or more of the Claims 1 to 10, therein characterized, in that the shredding-element is particle blasted after the hardening.

12. A process in accord with Claim 11, therein characterized, in that the shredding-element is blasted with the aid of glass pearls.

13. A process in accord with one or more of the Claims 1 to 12, therein characterized, in that the shredding-element is demagnetized.

14. A process in accord with one or more of the Claims 1 to 13, therein characterized, in that the shredding-element is chemically deburred.

15. A process in accord with one or more of the Claims 1 to 14, therein characterized, in that the shredding-element is coated.

16. A process in accord with Claim 15, therein characterized, in that the shredding-element is coated by nickel-plating.

17. A process in accord with one or more of the Claims 1 to 16, therein characterized, in that the tooth points of the shredding-element are subjected to a grinding procedure.

18. A process in accord with Claim 17, therein characterized, in that the points of the teeth are subjected to grinding in a direction counter to their operational direction.

19. A process in accord with Claim 18, therein characterized, in that the shredding-element carrier of the disintegrator roll with the affixed sawtooth wire and the grinding disk of the grinding procedure are driven in opposite directions.

20. A process in accord with one or more of the Claims 1 to 19, therein characterized, in that the sawtooth wire, before it is brought into shape, is a non-hardened wire.

21. A process in accord with one or more of the Claims 1 to 20, therein characterized, in that a non-hardening material is used for the shredding-element carrier.

22. A process in accord with Claim 21, therein characterized, in that, as a base material, a low carbon steel is employed.

23. A process in accord with one or more of the Claims 1 to 22, therein characterized, in that the start and/or the end of the sawtooth wire is welded to the shredding-element carrier.

24. A process in accord with one or more of the Claims 1 to 23, therein characterized, in that the sawtooth wire is plasma coated.

25. A process in accord with Claim 24, therein characterized, in that the coating is effected with titanium nitride.

26. A disintegrator roll for an open-end spinning apparatus, wherein the disintegrator roll has been manufactured by one or more of the Claims 1 to 18, with a shredding-element carrier, on which is mounted a sawtooth wire, therein characterized, in that the sawtooth wire (20) is a steel wire at least partially hardened following its shaping.

27. A disintegrator roll in accord with Claim 26, therein characterized, in that the sawtooth wire (20) is a hardened steel wire after being affixed to the shredding-element carrier (10).

28. A disintegrator roll in accord with Claim 26 or 27, therein characterized, in that the shredding-element is constructed as an inductive hardened sawtooth wire (20).

29. A disintegrator roll in accord with one or more of the Claims 26 to 28, therein characterized, in that the shredding-element carrier (10) is made of low carbon steel.

30. A disintegrator roll in accord with one or more of the Claims 26 to 29, therein characterized, in that the start and/or the end of the sawtooth wire (20) is welded to the shredding-element carrier (10).

31. A disintegrator roll in accord with one or more of the Claims 26 to 30, therein characterized, in that the sawtooth wire (20) is plasma coated.

32. A disintegrator roll in accord with Claim 31, therein characterized, in that the sawtooth wire (20) is coated with titanium nitride. 33. A disintegrator roll in accord with one or more of the Claims 26 to 32, therein characterized, in that the sawtooth wire (20) in the foot-area of its teeth occupies a lateral groove.

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